



App. No. 10/727,490

Amdt date April 17, 2006

Reply to Office action of November 16, 2005

**Amendments to the Specification:**

Please amend paragraph [0030] of the specification as filed as follows:

[0030] FIG. 2C is a schematic view of a vortex chamber tool, according to an embodiment of the invention. As shown therein, the inlet plate 125 is omitted, allowing the flow to contact the corkscrew deflector 115 directly. The omission of the inlet plate 125 may also reduce additional back pressure created by the inlet plate 125. The portion 107 of the inner barrel 105 extending below the corkscrew deflector 115 may be used in securing the vortex chamber tool to the outer barrel 110. For example, a collar stop 109 (~~not shown~~) may be coupled to both the portion 107 and the outer barrel 110.

Please amend paragraph [0034] of the specification as filed as follows:

[0034] Many other variations are possible with respect to the embodiments of the invention illustrated in FIGS. 1-3B. For example, the size of the opening 310 in the inlet plate 125 may also be varied according to design choice. In relatively higher flow rate applications for instance, a smaller turn in the corkscrew deflector 115, a larger angle between the corkscrew deflector 115 and the inlet plate 125, and a larger inlet plate opening 310 may be appropriate. Conversely, in relatively lower flow rate conditions, a larger turn in the corkscrew deflector 115, a smaller angle between the corkscrew deflector 115 and the inlet plate 125, and a smaller opening 310 in the inlet plate 125 may be produce improved flow results. Thus, although the corkscrew deflector 115 is shown in FIGS. 1-3A with a 360° turn, empirical analysis has determined that corkscrew deflectors having as small as a 90° turn are suitable for some applications. Moreover, although the illustrated embodiment is described as having an angle [[325]] 305 between the corkscrew deflector 115 and the inlet plate 125 of approximately 70°, empirical analysis has determined that the angle [[325]] 305 may range from 15° to 75°, depending on the application.

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Please amend paragraph [0035] of the specification as filed as follows:

[0035] For the reason that different flow conditions, fluid compositions, or other factors may require different tool geometries for optimum performance of the vortex chamber tool, the tool may also be adjustable. The angle [[325]] 305, or the amount of turn in the corkscrew deflector 115, or the length of the corkscrew deflector 115 and/or the inner barrel 105, or any combination, may be adjusted in a single tool to optimize the performance of the tool. The adjustment may be static, performed prior to insertion of the tool. In the alternative, the tool may self-adjust in situ within a given range by reacting to actual or perceived pressure, flow rate, or other factors. The adjustment mechanism can be operated with mechanical, hydraulic, or electronic adjustment mechanisms. For example, as shown in FIG. 3A, t[T]he inner barrel 105 may be telescoping, with the corkscrew deflector 115 attached at different sections of the inner barrel 105 and sufficiently pliable to adjust with the change in inner barrel length. Alternatively, movement of the attachments of the corkscrew deflector to the inner barrel or outer barrel may adjust the corkscrew deflector.